Waupaca River Bridge, Water Works
Station No. 1
129 Water Street
City of Waupaca
Waupaca County
Wisconsin

HAER No. WI-70-A

HAER
WIS
68-WAUP,
3A-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
Rocky Mountain Regional Office
National Park Service
P.O. Box 25287
Denver, Colorado 80225-0287

HAER NO. WI-70-A

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HISTORIC AMERICAN ENGINEERING RECORD

WAUPACA RIVER BRIDGE, WATERWORKS STATION NO. 1

Location: 129 Water Street
City of Waupaca, Waupaca County, Wisconsin

USGS Waupaca Quadrangle, Universal Transverse Mercator Coordinates:
Zone 16 Easting 333965 Northing 4913815

Present Owner: County of Waupaca

Present Use: Storage, office space

Significance: Waterworks Station No. 1 represents Waupaca's first efforts to provide its growing population with a municipal water system. After several false starts, construction on the building began in 1897. Put into service later that year, the station met the city's needs until 1908 when an additional station was built. Station No. 1 remained in service until about 1934, and is significant as a manifestation of the city's early commitment to provide its citizens with a first-rate, municipal water system.

PART I. HISTORICAL INFORMATION

A. Physical History:

1. Date of erection: 1897[1]

2. Architect: B.J. Ashley, George Sturtevant[2]

3. Original and subsequent owners: Public ownership.

4. Builders, suppliers:

A. Builders: J.H. Hayes, Seckner Construction Company, Charles Weeks[3]

B. Suppliers: Point Granite Quarry, Waupaca Granite Quarry, Dowagiac (steel furnace), Sundstrand (oil burner), Autocon

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[1]Waupaca Republican, 4 June 1897, 5; 2 July 1897, 5; 9 July 1897, 5; 16 July 1897, 5; 30 July 1897, 1.

[2]Waupaca Republican, 3 July 1896, 5; 10 July 1896, 5; 8 October 1897, 1.

[3]Waupaca Republican, 4 June 1897, 5; 2 July 1897, 5; 9 July 1897, 5; 16 July 1897, 5; 30 July 1897, 1.

Industries (water pump meter)[4]

5. Alterations and additions: The only apparent alteration was the infilling of what is thought to have been the original, double door entrance. A wide, three panel transom and brick, segmental arch remain above the old doorway.

B. Historical Context:

The City of Waupaca follows in the long line of municipalities that have provided their residents with water systems, a line that dates to before the Revolutionary War period.[5] Its Water Works Station No. 1 is located at the west end of the Waupaca River/Mill Street Bridge. A contextual essay that discusses the evolution of the town in general, and the Waupaca River/Mill Street Bridge in particular, is found in HAER No. WI-70.

Built on the site of the Waupaca Star Mills in 1897, Station No. 1 was part of a water works project that became necessary as the city continued to grow and develop. The plans for a water works system were apparent as early as 1891 when the city purchased the site specifically for the construction of a power station. On 4 June the common council awarded a franchise for the construction of a water works system to R.N. Roberts and J.H. Woodnorth. The project never got off the ground, however, because it lacked adequate financial resources. Further proposals for a water works system were submitted in the spring of 1893 -- one by Moffett, Hogkins & Clark Co. and the other by George C. Morgan. The common council shelved these propositions, nevertheless, feeling that the city should wait several years before pursuing the undertaking. It was the outbreak of several serious fires during the winter and spring of 1896 that precipitated renewed interest in a water works system. The Waupaca Republican reported that firemen and citizens, while busily dragging fire hoses from tank to tank, "... did not forget to sing a marching song every verse of which was 'Waterworks.'"[6]

Andrew M. Hansen and Frank S. Baldwin subsequently approached the council about obtaining a franchise for the construction and operation of a water works system. On 26 June, the council adopted a water works ordinance that granted a franchise to Hansen and Baldwin for thirty-five years. According to the ordinance, the project was to include two pumps capable of handling at least 1,500,000 gallons of water per day. The terms

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[4]Waupaca Republican, 24 September 1897, 5; 1 October 1897, 5; Visual inspection, 13 July 1993.

[5]A thorough discussion of municipal water systems and their development is found in Chapter 8 of: Ellis L. Armstrong, ed., History of Public Works in the United States, 1776-1976 (Chicago: American Public Works Association, 1976).

[6]Waupaca Republican, 8 October 1897, 1; Lloyd S. Matheson, "The Waupaca Water Department," in Waupaca Centennial Book, 1857-1957 (Waupaca: n.p., 1957), 73.

specified that the project's cost should not exceed $41,500, and at the end of five years, the city reserved the right to purchase the works. The plans and specifications of the project were to follow those offered by B.J. Ashley of Chicago. But when the common council received the plans, it employed engineer George Sturtevant of Chicago to facilitate the final design of the dam and waterwheel.[7]

Although the original ordinance stipulated that the system was to be ready by 1 January 1897, questions relating to design delayed construction. Hansen and Baldwin wanted an additional $13,000 to implement changes that included building a reservoir rather than a stand pipe and installing pumps operated by water power. Furthermore, at the common council meeting on 8 April 1897, Hansen and Baldwin sought an amendment to the original ordinance that would allow the city to purchase the system after only one year rather than five. Both measures were approved on 18 May.[8]

Expectations ran high as preparations for the project moved ahead. It was thought that the project would infuse $15,000 to $20,000 into the city's economy and employ from seventy-five to one hundred local residents. By July, the necessary capital was secured and the Waupaca Waterworks Company was incorporated by Hansen, Baldwin and Charles Churchill. They hired J.H. Hayes of Appleton to act as superintending engineer. The Seckner Contracting Company of Chicago was awarded the contract for the project and Charles Weeks was appointed as supervisor. Preparations for the actual construction included the delivery of the water main pipes. According to the Waupaca Republican, there was "dirt flying" when work commenced on 27 July.[9]

Initially, eighty men were employed at $1.25 per day. Most of them were assigned to digging trenches for the water pipes. A crew was also detailed to work on the foundation for the power house near the Mill Street Bridge, with construction scheduled for the first week of August. The specifications of the power house required that it be thirty by forty feet and sixteen feet above the street. In addition, the station was to be equipped with "two turbine wheels of 75 horse power each, set in steel casings and with steel flumes, and two duplex compound pumps, each having a capacity of 750,000 gallons per twenty-four hours."[10] The erection of the station and reservoir was contracted to Henry J. Reed of Minneapolis. By 6 August, Reed and

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[7]Waupaca Republican, 3 July 1896, 8; 10 July 1896, 5; 8 October 1897, 1.

[8]Common Council of the City of Waupaca, "Proceedings of the Common Council of the City of Waupaca, 8 April 1897," 359-60; Ibid., 18 May 1897, 377; Waupaca Republican, 4 June 1897, 5; Rosemary Freiburger and John Holzman, eds., Our Heritage (Waupaca: Waupaca County Post, 1976), 14.

[9]Waupaca Republican, 4 June 1897, 5; 2 July 1897, 5; 9 July 1897, 5; 16 July 1897, 5; 30 July 1897, 1.

[10]Waupaca Republican, 30 July 1897, 1.

his crew were blasting through granite rock to complete the wheel pit in the station's foundation. In conjunction with the power house, a new dam was built across the Waupaca River by A.G. Nelson, owner of the mill at the east end of the bridge.[11]

Work on the pump house progressed steadily, but work on the trenches was interrupted in late August. Roughly forty men went on strike for a raise in their daily wage to $1.50. Rising prices for staples, such as flour, sugar and potatoes prompted their action. Mr. Weeks tried to persuade workers to continue at the $1.25 rate, but most rejected the offer. The few who were amenable did not go back to work because they feared co-worker's reprisals. During deliberations, some strikers worked for Reed on the pumping station, removing sand from the pond. On 26 August, laborers, anxious to finish the trenchwork before the fall potato harvest, accepted a compromise wage of $1.38 per day.[12]

With the strike resolved, work on the water pipes resumed. By 24 September the last section of water pipe was completed and a solid stone arch was being installed in the south wall of the pump station's wheel pit. The stone came from the Point and the Waupaca Granite Quarry. On 1 October, however, work on the pump house halted because the water wheels had not yet arrived. In the meantime, Weeks built the crib for the station's intake pipe. Constructed of two by six hemlock planks spiked together, the crib was to be four to five feet high. It had a stone bottom that was anchored down by iron rods. On the crib's exterior, stone was used as infill and the entire crib area was covered with a layer of crushed stone through which water would be filtered before entering the intake pipe. Weeks boasted that "not a particle of sediment or even a mosquito can find its way to the intake pipe through this crushed stone infiltration...."[13]

By 22 October Reed was shingling the power station building. The exterior, however, could not be completed until the water wheels arrived. M.F. Miranda, an expert employed by Stillwill-Bierce & Smith-Vaile Co. of Dayton, Ohio, was waiting to install the wheels as well as the other pumping machinery. Because of this delay, the city council granted the Waupaca Waterworks Company a thirty-day extension on 1 November to finish the project. Once the machinery arrived, Miranda had the water wheels in place by 5 November. He then prepared the pumps so that Weeks could make the necessary connections. Meanwhile, Reed plastered the building and expected to have the station finished once all machinery was in place.[14]

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[11]Waupaca Republican, 30 July 1897, 1; 6 August 1897, 5.

[12]Waupaca Republican, 13 August 1897, 5; 27 August 1897, 5.

[13]Waupaca Republican, 24 September 1897, 5; 1 October 1897, 5.

[14]Waupaca Republican, 22 October 1897, 5; 5 November 1897, 5; "Proceedings," 1 November 1897, 412.

On 17 November, the completed water works system was tested. Four hydrants around the city were tested using direct pressure and then reservoir pressure only. Both tests were successful and exceeded ordinance requirements. In the first case, the water was forced to a height of 125 feet; reservoir pressure forced water to a height of sixty-five to seventy feet. The council was so pleased with the results that in a series of meetings in mid-November, it agreed to assume control of the system. In case there were any problems with the system, the Waupaca Water Works Company had to post an $8,000 and a $2,000 bond. On 24 November, the Water Works Committee of the council was ordered to take immediate responsibility for the seven miles of water mains, the reservoir and the station on Water Street.[15]

Until 1908, the Water Street station on the Waupaca River was the city's only source of water. In that year, another station was built on Mirror Lake. Both stations were needed to meet growing water demands. Consequently, the Water Street station had to undergo several modifications. In 1915, the old dam on the Waupaca River was replaced with a new concrete dam; new power equipment was purchased for the Water Street station in 1922. Evidence indicates that one of the turbines was not functioning by 1924 and that both turbines were inoperative by 1934. Waupaca's increasing water needs were ultimately fulfilled with the construction of a deep well pumping station in 1950.[16]

PART II. ARCHITECTURAL INFORMATION

A. General Statement:

1. Architectural Character: Waterworks Station No. 1 was built in 1897. It is a good example of a small, municipally owned, utility building.

2. Condition of fabric: The condition of the historic fabric is generally good. The only apparent alteration is the infilling of what was likely the original, double door entrance. It should be noted, however, that the structural integrity of the riverside foundation is deteriorating.

B. Exterior Description:

1. General Description: Waterworks Station No. 1 is a one story, utilitarian brick structure that is oriented on a north northwest/south southeast axis.

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[15]"Proceedings," 18-24 November 1897, 419-24; Waupaca Republican, 19 November 1897, 5.

[16]Matheson, Centennial Book, 73; Sanborn Map & Publishing Co., Map of Waupaca, Wisconsin, 1924 and 1934.

Rising from a granite stone foundation, this standing seam, metal, hipped roof building has small gablets set at each end of the roof ridge. The brick walls are framed by corner pilasters and a three step, raised cornice that is on the same plane as the pilasters. Scrolled brackets with pendants are set under the eaves. The windows have segmental relieving arches with concrete key stones and concrete sills.

Centered in the wall that faces the street (assuming a north/south axis, this is the south wall) is the original double door entrance, above which is a three panel transom and a segmental relieving arch with a concrete keystone. A two-over-two light, sash window is set to either side of the door. Centered in the west wall is a single door with a two light window in the upper half and an inset panel with diagonal strips in the lower half. This door also has a segmental relieving arch with a concrete keystone and a two light transom. Immediately to the right of the door is a projecting chimney with concrete coping that passes through the roof eave and rises above the building. Single, two-over-two light, sash windows are symmetrically placed to either side of the door. The east wall contains three symmetrically placed windows, while the north wall contains two.

2. Overall Dimensions: 40'-6" x 29'-11".

3. Openings:

   a. Doorway and Doors: Original front entrance is 90" high and 84" wide. Side (west) door is 90" high by 36" wide.

   b. Windows: Windows on the west, south and east sides are 82" high and 37-1/2" inches wide. The two windows on the north side are 75" high and 38" wide.

4. Roof: The most intriguing decorative items on this building are the heavy scrolled brackets with pendants under the roof eaves. Seven such brackets are found on the north and south sides, while nine are found on the east side. Only eight brackets are on the west side, since one is lost to the placement of the chimney.

C. Interior Description:

1. General Description: The first floor of the station consists of two rooms. Most of the floor is taken up by a larger room that contains water system equipment and work tables. A small, 8'-10" x 7'-11" office is set in the southeast corner of the building. It has a canted corner in which the door is set that is crowned by heavy wooden brackets and a pendant. Tongue and groove wainscotting covers the lower portion of the walls, while plaster covers the upper part.

The basement has two main rooms. The room into which the stairs descend is largely taken up by the Dowagiac Steel Furnace and the

Sundstrand Oil Burner. The second room, under the north half of the building, contained the two turbines -- only one of which remains today. It is a 90" turbine with a 3-1/2", stepped shaft that once extended to equipment formerly set on the first floor. A steel shell remains where the other turbine once existed.

2. Stairways: A twelve step stairway with 9-1/4" x 36" steps and a 2" x 4" railing goes from the first floor to the basement.

3. Openings:

   a. Doorways and doors: Door from office to large work room is 88" high by 32-1/2" wide. Trap door from first floor to basement is 66" long by 28" wide.

C. Setting:

Waterworks Station No. 1 is located in the City of Waupaca, immediately adjacent to, and at the west end of, the Waupaca River/Mill Street Bridge. A multiple family residential building and a city garage, with downtown Waupaca beyond that, is west of the station, while the bridge and an open, park-like area is to the east, with an industrial plant beyond that.

PART III. SOURCES OF INFORMATION

A. Bibliography:

1. Primary and unpublished sources:

City of Waupaca, Common Council. "Proceedings of the Common Council of the City of Waupaca." Various dates.

Sanborn Map & Publishing Co., Map of Waupaca, Wisconsin, 1924 & 1934.

Waupaca Republican, various dates.

2. Secondary and published sources:

Armstrong, Ellis L., ed. History of Public Works in the United States, 1776-1976. Chicago: American Public Works Association, 1976.

Matheson, Lloyd S. "The Waupaca Water Department." In Waupaca Centennial Book, 1857-1957. Waupaca, WI: n.p., 1957.

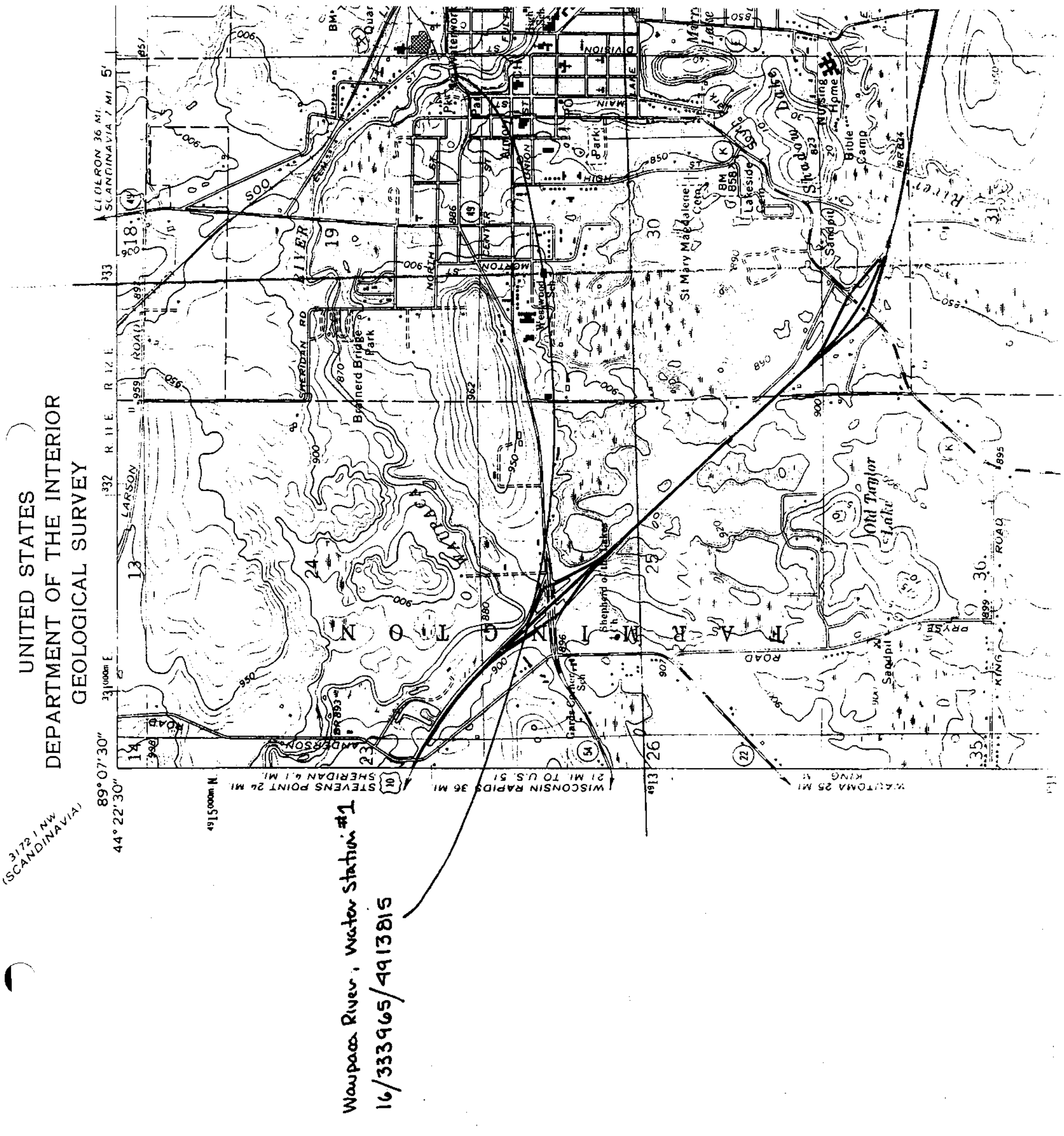
Our Heritage. Waupaca, WI: Waupaca County Post, 1976.

Prepared by:

John N. Vogel, Ph.D.
Heritage Research, Ltd.
N89 W16785 Appleton Avenue
Menomonee Falls, Wisconsin
27 August 1993

PART IV. PROJECT INFORMATION

This project has been sponsored by the Wisconsin Department of Transportation. Ayres Associates, consulting engineers in Eau Claire, Wisconsin, formally acted as the contracting agency. The project was undertaken by Dr. John N. Vogel, Principal Investigator and Historian for Heritage Research, Ltd., who provided the photographic work, the architectural/technical data, and the context. Vogel was assisted in the research and preparation of this material by Kevin Abing and Laura Abing, Heritage Research Assistant Historians.


UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
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3172 I NW
(SCANDINAVIA)
Waupaca River, Water Station #1
16/333965/4913815
STEVENS POINT 24 MI.
SHERIDAN 4.1 MI.
WISCONSIN RAPIDS 36 MI.
21 MI. TO U.S. 51
WAUTOMA 25 MI
Old Taylor Lake
Shadow Lake
Brainerd Bridge Park
St Mary Magdalene Cem
Nursing Home
Bible Camp
Lakeside
Sandpit
WAUPACA
FARMINGTON